

REMARKS

This responds to the Office Action dated December 5, 2007.

Claims 16 and 26 are amended, no claims are canceled, and claim 27 is added; as a result, claims 1-8 and 12-27 are now pending in this application. Support for the new claim 27 can be found at least in paragraph 9 of the specification

§103 Rejection of the Claims

Claims 1-3, 6-8, 12-17 and 20-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cano et al. ("Robust Sound Modeling for Song Detection in Broadcast Audio") in view of Petrovic (U.S. Patent No. 7,024,018).

As explained in the response to the non-final Office action mailed June 12, 2007, the matching method in Cano uses two sequences that start at the same position, which is distinct from a matching method recited in claim 1 that uses two fingerprint blocks located in the input set at distinct positions. In the final Office action mailed December 5, 2007, Examiner combined Cano with Petrovic in an attempt to arrive at the method of claim 1. Petrovic addresses watermark position modulation (Petrovic, Title) and is directed at methods and apparatus a for embedding a plurality of watermarks in the host signal. (Petrovic, Abstract.)

In the Advisory action mailed on March 25, 2008, Examiner states that "the combination is sufficient to incorporate the teaching of Petrovic into the teaching of Cano to detect and match the watermarks (fingerprints) based on the position." Examiner, thus clearly treats the terms "fingerprinting" and "watermarking" as the terms describing the same technique and combined Cano and Petrovic based on an incorrect assumption that the term "watermark" is just another way to refer to a "fingerprint." Applicant submits that a watermark is inherently distinct from a fingerprint. A watermark is auxiliary information (e.g., metadata) embedded into an information signal. A fingerprint of an information signal, on the other hand, is generated based on characteristic components of the information signal itself. Thus, obtaining a fingerprint involves examining the original signal itself (e.g., an audio signal), while obtaining a watermark from a

host signal involves identifying information that has been added to the original signal. In the case of fingerprinting, the clues to determine positions of fingerprint blocks within an information signal are dictated by the unchanged signal (e.g., by the audio itself). In the watermarking case, on the other hand, the clues to determine positions of watermarks within the signal are dictated by the payload (i.e., by the modulated and then hidden signal). Therefore, selecting fingerprint blocks representing parts of an information signal based on their associated relative positions is distinct from detecting watermarks in a host signal and determining additional information based on relative positions of the embedded watermarks. Petrovic, being concerned with watermarking, whether considered separately or in combination with Cano, fails to disclose or suggest the feature of "selecting a further fingerprint block from said set of input fingerprint blocks, the further fingerprint block associated with a second position in the input set of fingerprint blocks relative to the first position associated with said first fingerprint block, the second position being distinct from the first position" recited in claim 1. Thus, the combination of Petrovic with Cano fails to disclose or suggest all elements of claim 1.

Furthermore, as explained in the response to the final Office action mailed December 5, 2007, Petrovich is not concerned in any way with matching any value associated with the host signal with any reference value in a database, but rather is related to using the relative positions of watermarks embedded in a host signal as a vehicle that carries embedded information, such as information relating to copy-control and media verification. (Petrovic, 1: 53-60.) The watermarks embedded into a host signal in Petrovic may be separated by a time interval. (Petrovic, Figs 2A and 2B.)

Applying methodology prescribed by MPEP 2143(A) for determining whether a claim is obvious in view of a combination of references, it is necessary to determine whether "one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination yielded nothing more than predictable results to one of ordinary skill in the art." *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d at 1395. It is therefore necessary to evaluate the result of a combination of the matching technique of Cano with techniques for embedding and extracting watermarks in Petrovic.

Introducing the techniques of embedding watermarks of Petrovic into the method of Cano, may result in embedding copy control and media verification watermarks into an information signal. A signal of Cano, modified by introducing watermarks at distinct positions within the signal and extracting information associated with the embedded watermarks (in order to provide copy control and media verification, as suggested by the Office action), does not affect the matching method of Cano. In other words, the matching method of Cano, even when modified to include the step of embedding of time-separated watermarks, would still be distinct from the method of claim 1.

Therefore, because combining Cano with Petrovic does not yield the matching method of claim 1, the rejection of claim 1 and its dependent claims should be withdrawn.

Claim 12 recites “a processing unit arranged to select a first fingerprint block of said set of input fingerprint blocks, the first fingerprint block associated with a first position in the input set of fingerprint blocks; find a first matching fingerprint block in said database that matches the first fingerprint block; select a further fingerprint block from said set of input fingerprint blocks, the further fingerprint block associated with a second position in the input set of fingerprint blocks relative to the first position associated with said first selected fingerprint block, the second position being distinct from the first position; locate a corresponding fingerprint block in said database at a position corresponding to the second position in the set of fingerprint blocks.” Thus, claim 12 and its dependent claims are patentable and should be allowed at least for the reasons articulated with respect to claim 1.

Claim 15 recites “a processing unit arranged to select a first fingerprint block of said set of input fingerprint blocks, the first fingerprint block associated with a first position in the input set of fingerprint blocks; find a first matching fingerprint block in said database that matches the first fingerprint block; select a further fingerprint block from said set of input fingerprint blocks, the further fingerprint block associated with a second position in the input set of fingerprint blocks relative to the first position associated with said first selected fingerprint block, the second position being distinct from the first position; locate a corresponding fingerprint block in said database at a position corresponding to the second position in the set of fingerprint blocks.”

Thus, claim 15 is patentable and should be allowed at least for the reasons articulated with respect to claim 1.

Claim 16 recites “instruction data to cause a machine to select a first fingerprint block of said set of input fingerprint blocks, the first fingerprint block associated with a first position in the input set of fingerprint blocks; find a first matching fingerprint block in said database that matches the first fingerprint block; select a further fingerprint block from said set of input fingerprint blocks, the further fingerprint block associated with a second position in the input set of fingerprint blocks relative to the first position associated with said first selected fingerprint block, the second position being distinct from the first position; locate a corresponding fingerprint block in said database at a position corresponding to the second position in the set of fingerprint blocks; and determine if the corresponding fingerprint block matches said further fingerprint block.” Thus, claim 16 and its dependent claims are patentable and should be allowed at least for the reasons articulated with respect to claim 1.

Claim 26 recites “receiving a plurality of input fingerprint blocks, the plurality of fingerprint blocks to represent an input information segment; selecting a first fingerprint block from the plurality of input fingerprint blocks, the first fingerprint block associated with a first position in the plurality of input fingerprint blocks; determining a matching fingerprint block in the reference database based on a positive match between the first fingerprint block and the matching fingerprint block; determining a second position in the plurality of input fingerprint blocks, the second position based on a predetermined relationship between two fingerprint blocks from the plurality of input fingerprint blocks, the second position being distinct from the first position; determining a further fingerprint block at a second position in the plurality of input fingerprint blocks, the second position being distinct from the first position; in the reference database, determining a corresponding fingerprint block based on its position in the reference database corresponding to the second position; comparing the further fingerprint block and the corresponding fingerprint block to determine a match.” Thus, claim 26 is patentable and should be allowed at least for the reasons articulated with respect to claim 1.

Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cano et al. ("Robust Sound Modeling for Song Detection in Broadcast Audio") in view of Petrovic (U.S. Patent No. 7,024,018) and in view of Burges et al (US Patent No. 7,082,394).

Burges is related to noise-robust feature extraction. (Burges, Title.) Burges, whether considered separately or in combination with Cano and Petrovic, fails to disclose or suggest the elements of claim 1 that are present in claims 4 and 5 by virtue of their being dependent on claim 1. Thus, claims 4 and 5 are patentable in view of Cano, Petrovic, and Burges.

Claims 18 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cano et al. ("Robust Sound Modeling for Song Detection in Broadcast Audio") in view of Petrovic (U.S. Patent No. 7,024,018) and in view of Petrovic et al. (U.S. Patent No. 6,737,957).

Petrovic et al. (U.S. Patent No. 6,737,957) - Petrovic '957 - is related to a system for using a watermark embedded in an audio signal to remotely control a device. Petrovic '957, whether considered separately or in combination with Cano and Petrovic, fails to disclose or suggest the elements of claim 16 that are present in claims 18 and 19 by virtue of their being dependent on claim 16. Thus, claims 18 and 19 are patentable in view of Cano, Petrovic, and Petrovic '957.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

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Page 13

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney 408-278-4041 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 13th day of May 2008.

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